

October 9, 2020

**BY ELECTRONIC FILING**

Marlene H. Dortch  
Secretary  
Federal Communications Commission  
445 Twelfth Street, S.W.  
Washington, DC 20554

Re: *Space Exploration Holdings, LLC, IBFS File No. SAT-MOD-20200417-00037*

Dear Ms. Dortch:

Space Exploration Holdings, LLC (“SpaceX”) files this letter in response to a recent ex parte presentation made by representatives of Kuiper Systems LLC (“Amazon”) to Commission staff with respect to the modification SpaceX has proposed for its non-geostationary orbit (“NGSO”) satellite system.<sup>1</sup> Just months ago, the Commission required Amazon – not SpaceX – to submit an interference analysis to show how it will protect first-round licensees, yet Amazon continues to argue that first-round licensees like SpaceX should be forced to protect Amazon’s second-round system from interference.<sup>2</sup> Amazon’s argument is plainly inconsistent with both its license and settled precedent. Amazon’s proposed approach would undermine the processing round regime, stifle innovation by effectively freezing NGSO systems in place once they are licensed, and ultimately harm consumers by discouraging Amazon’s competitors from upgrading their systems to operate better – and safer – systems. In addition, Amazon’s concerns about how NGSO systems can operate in proximity to each other are typically handled in private coordination, and should be here as well.

**Amazon’s Claims for Interference Protection Are Contrary to Precedent, Its Own License, and the Certainty Arising from the Commission’s Processing Round Regime**

Amazon’s continuing efforts to reassign the burden of its own untimely application onto its competitors is inconsistent with Commission policy and will result in less competition and worse service for consumers. Specifically, Amazon proposes that any modification of a system authorized in an earlier processing round should be secondary to Amazon’s own system, even though Amazon is required not to interfere with the earlier-round system. Yet, as the Commission explained in *Teledesic*, when an applicant for modification of an NGSO authorization does not seek any additional bandwidth, the

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<sup>1</sup> See Letter from Mariah Dodson Shuman to Marlene H. Dortch, IBFS File No. SAT-MOD-20200417-00037 (Sep. 24, 2020) (“Amazon Ex Parte”).

<sup>2</sup> *Kuiper Systems LLC*, 35 FCC Rcd. 8324, ¶ 59(a) (2020) (“*Amazon Authorization*”) (prior to initiating service, “Kuiper must certify that it has completed a coordination agreement with or make a showing that it will not cause harmful interference to any operational system licensed or granted U.S. market access” in a prior processing round).

modification should be granted where it “does not present any significant interference problems and is otherwise consistent with Commission policies.”<sup>3</sup> Accordingly, SpaceX provided extensive analysis of the impact its proposed modification would have on the interference environment. Importantly, SpaceX also demonstrated that the interference analysis provided by Amazon was fatally flawed.<sup>4</sup>

Yet SpaceX also explained that Amazon filed its application three years after the close of the earlier processing round, and the Commission does not consider untimely applications like Amazon’s when considering modifications under the *Teledesic* analytical framework.

Amazon stands on a different footing from other operators in opposing applications that, in its view, would significantly change the interference environment. Because it does not yet hold an authorization there is, indeed, no baseline from which to judge whether a significant change has occurred with respect to Amazon’s system. And because it was not considered in the same processing round as SpaceX, Amazon is not entitled to the same interference considerations as are first-round licensees. Moreover, Amazon has repeatedly made clear its conviction that its ability to complete good faith coordination should alleviate any interference concerns.<sup>5</sup>

Just days after SpaceX made this point, the Commission included in Amazon’s license a condition consistent with SpaceX’s argument, and indeed with *Teledesic* itself. Specifically, the Commission made clear – with full knowledge of SpaceX’s pending modification and the *Teledesic* precedent – that *Amazon* is the operator that “must coordinate to prevent harmful interference to operational systems licensed or granted U.S. market access in the previous NGSO FSS processing rounds.”<sup>6</sup>

In its *ex parte*, Amazon continues its efforts to limit the scope of this unambiguous condition. Specifically, Amazon claims that because the Commission found that the facts in *Teledesic*’s case warranted evaluating its modification with relation to pending applications, the same approach must apply to all other operators henceforth.<sup>7</sup> Amazon thus asserts that SpaceX must demonstrate that its proposed modifications would not present any significant interference problems with respect not only to all first-round systems but also all pending NGSO applications, including the one filed by Amazon.<sup>8</sup>

Amazon’s argument misapprehends the *Teledesic* precedent and the conditions of its own NGSO authorization. More importantly, it would establish a regime that would stifle innovation among NGSO systems, lead to absurd results, and undermine the utility

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<sup>3</sup> *Teledesic LLC*, 14 FCC Rcd. 2261, ¶ 5 (IB 1999) (“*Teledesic*”).

<sup>4</sup> See Consolidated Opposition to Petitions and Response to Comments of Space Exploration Holdings, LLC, IBFS File No. SAT-MOD-20200417-00037, at 22, 25, 27-28 (July 27, 2020).

<sup>5</sup> *Id.* at 21.

<sup>6</sup> *Amazon Authorization* ¶ 34.

<sup>7</sup> *Teledesic* ¶ 7.

<sup>8</sup> Amazon Ex Parte, Presentation at 4.

of the processing round system, all to the detriment of customers in the United States and around the world who lack a robust broadband option.

At the time the Commission issued its *Teledesic* order, there was only one Ka-band NGSO system that participated in the first processing round – Teledesic. Thus, a rule that allowed Teledesic to modify its authorization so long as it did not present any significant interference problems to other first-round licensees would have been meaningless, effectively giving Teledesic the unrestricted ability to change its system in perpetuity. This could have allowed Teledesic to prevent other NGSO systems from operating, including the five applicants in the second processing round – contrary to the fact that “the Commission ha[d] always expected multiple NGSO FSS systems to operate in the Ka-band and Teledesic is required to support this goal.”<sup>9</sup> Critically, Teledesic had yet to launch a single satellite in its NGSO system. As the Commission observed, “the degree of burden sharing for NGSO FSS systems depends in large part on where the licensee is in implementing its system.”<sup>10</sup>

Tellingly, Amazon was not able to point to a single instance in more than two decades where the Commission found the situation warranted the same treatment. In fact, the Commission found numerous proposed changes to NGSO systems to be in the public interest where it did not consider pending applications – *including the two modifications previously issued to SpaceX*.<sup>11</sup> The current situation also presents an entirely different set of considerations than the Commission faced in *Teledesic*. SpaceX is but one of nine NGSO systems authorized in the first processing round. Thus, maintaining the interference environment for other first-round systems imposes a significant constraint on any modification SpaceX might propose. By ensuring that a modification does not result in a significant increase in the first-round interference environment, the *Teledesic* standard effectively ensures that the level of protection that later applicants must provide will be maintained as well.

Also unlike Teledesic, SpaceX has deployed over 700 satellites in its NGSO constellation, is manufacturing 120 satellites per month, and is initiating commercial service. These were the kinds of factors that led the Commission to reject Amazon’s request to have its application filed in 2019 treated as if it had been filed three years earlier. Specifically, the Commission based its decision in large part upon the fact that “[t]his is

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<sup>9</sup> *Teledesic Corp.*, 17 FCC Rcd. 2489, ¶ 10 (2002).

<sup>10</sup> *Id.* ¶ 8.

<sup>11</sup> The Commission granted SpaceX modification applications on April 26, 2019 and December 19, 2019. In neither decision did the Commission consider the effect of those modifications on the systems proposed by the three applications – by Amazon, OneWeb, and New Spectrum Satellite – that were pending at the time and ultimately initiated the second Ku/Ka-band NGSO processing round. See IBFS File Nos. SAT-LOA-20190704-00057, SAT-MOD-20180319-00022, and SAT-PDR-20170726-00111. Similarly, the Commission did not consider pending applications when evaluating amendments filed by O3b and Viasat to their respective first-round applications. See *O3b Networks*, 33 FCC Rcd. 5508, ¶¶ 5, 19-23 (2018); *Viasat, Inc.*, 35 FCC Rcd. 4324, ¶¶ 4, 10-11 (2020).

not a situation where, for example, the Commission had authorized one or two systems and those systems had made minimal progress toward operation.”<sup>12</sup>

In these circumstances, the approach Amazon prefers would lead to absurd results. For example, any modification filed by an earlier-round NGSO licensee would have to demonstrate its impact on any NGSO application filed *after* that modification and during the entire time the application was pending. This would give any party the ability to veto such a modification by simply filing an application for a system reverse-engineered to be adversely affected by the proposed changes – even if such an application never proceeded to an authorization, to say nothing of an operational system. Just the prospect of having to anticipate possible future applicants would be sufficient to prevent operators from seeking to upgrade their systems to implement innovative new technologies and services. Such a result would not only be anti-competitive but would also be directly contrary to the Commission’s stated intention that processing rounds “provide a measure of certainty in lieu of adopting an open-ended requirement to accommodate all future applicants.”<sup>13</sup> In contrast to the Commission’s approach that promotes innovation, Amazon’s proposal would freeze networks in time and ultimately leave consumers worse off.

But Amazon’s proposal is also inconsistent with its own license. Amazon glosses over the condition placed on its license requiring that *Amazon* “prevent harmful interference” to systems authorized “in the previous NGSO FSS processing rounds.”<sup>14</sup> Until that coordination is complete, no one – not even Amazon – will know how its system will operate. In such circumstances, neither SpaceX nor any other operator can be expected to determine the effect a proposed modification would have on Amazon’s as-yet undefined system. Moreover, SpaceX is actively building and deploying its NGSO system. While SpaceX is poised to launch and provide service using satellites affected by this modification almost immediately after receiving approval from the Commission, Amazon has yet to finalize its design, much less actually build a satellite or a gateway or a user terminal. Considering Amazon’s still nascent stage in development, it is clearly in the best position to adapt.

Amazon filed its application three years too late to participate in the earlier processing round and has been trying ever since to put the burden of its delay on competitors. The Commission rightly saw through these efforts when it rejected Amazon’s first attempt in which it asked to be considered as if it were a first-round applicant. The Commission should similarly reject its current attempt to demote first-round systems seeking a modification into the second round, even if that modification would have no significant effect on the first-round interference environment.

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<sup>12</sup> *Amazon Authorization* ¶ 47.

<sup>13</sup> *Update to Parts 2 and 25 Concerning Non-Geostationary, Fixed-Satellite Service Systems and Related Matters*, 32 FCC Rcd. 7809, ¶ 61 (2017).

<sup>14</sup> *Amazon Authorization* ¶ 34.

## **Amazon's Concerns About Overlapping Orbits Are Better Resolved Through Coordination**

SpaceX proposes to improve the safety profile and service capabilities of its authorized NGSO system by moving the remainder of its satellites to lower altitudes where it has already deployed over 700 satellites. Despite the overall benefits to space safety, Amazon nonetheless expresses concern that satellites from the highest orbital shell proposed by SpaceX would, when operating at the upper range of the  $\pm 30$  km tolerance, overlap with the lowest of Amazon's orbital shells.<sup>15</sup> Yet as Amazon concedes, "FCC rules do not prohibit applicants from seeking overlapping constellations."<sup>16</sup> The Commission has concluded that the risk of collisions between the space stations of NGSO systems "are best addressed in the first instance through inter-operator coordination" in which operators can consider "a wide range of changes in system design and operations" – such that the Commission "do[es] not believe it appropriate to specify the methods for effecting coordination."<sup>17</sup> Both SpaceX and Amazon will operate maneuverable satellites, and SpaceX is confident the two operators can develop protocols for sharing orbital real estate to the extent necessary. Both operators have an obligation to coordinate physical operations in good faith,<sup>18</sup> and SpaceX believes that this affords the best and most appropriate way to resolve Amazon's concerns.

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The Commission should maintain its current approaches to interference and orbital operations, both of which encourage innovation and maximize service for consumers. The need for broadband has never been more urgent. As such, the Commission should approve SpaceX's modification quickly so it can safely deploy high-quality broadband to consumers as soon as possible.

Sincerely,

/s/ David Goldman

David Goldman  
Director of Satellite Policy

SPACE EXPLORATION TECHNOLOGIES CORP.  
1155 F Street, NW  
Suite 475  
Washington, DC 20004  
Tel: 202-649-2641  
Email: David.Goldman@spacex.com

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<sup>15</sup> See Petition to Deny and Comments, IBFS File No. SAT-MOD-20200417-00037, at 5-7 (July 13, 2020) ("Amazon Petition").

<sup>16</sup> *Id.* at 6.

<sup>17</sup> *Space Exploration Holdings, LLC*, 33 FCC Rcd. 3391, ¶ 11 (2018).

<sup>18</sup> See *Amazon Authorization* ¶ 32 and n.75.